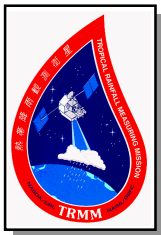# TRMM Monthly Status Briefing

May 3, 2000

FOT Overview

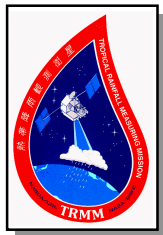- Operations Status - Engineering Staff
    - Flight Ops Summary & Training - Lou Kurzmiller
    - ACS, Deployables, RCS, C&DH, & RF - Edwin Weidner
    - Power, Electrical, & Thermal - Candace Shoemaker
    - CERES, LIS, PR, TMI, & VIRS - Candace Shoemaker
    - Ground System - Edwin Weidner
    - Upcoming Activities - Lou Kurzmiller
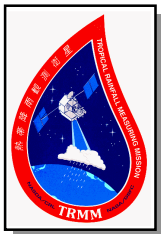
Flight Operations Summary

- Supported 520 SN events in April

  - 1 Yaw Maneuver (presently +X forward)

  - 13 Delta-V Maneuvers

- 7 Event Rpts, 1 Anomaly Rpt & 3 Generic Late Acq Rpts generated

  - ER #166: EPV failure (See ACS)

  - ER #168-169: Pertain to UPS-5 problems (See Ground)

  - ER #170: Lost event, possible ADPE problem (See Ground)

  - ER #171: Lost science data, MOC error (See Ground)

  - ER #172: MOC h/w failure (See Ground)

  - ER #173: MOC unable to generate loads (See Ground)
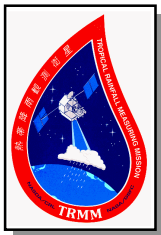
Flight Operations Summary

- Significant Milestones

  - CERES: Instrument operations/testing continue

  - GITT Security HP UX installed/uninstalled on WS2&3 String 3

- Staffing

  - Two members of FOT Engineering staff left

  - Promoted two FOT analysts to Engineering staff & Ops Supervisor

  - Retained services of one experienced engineer

  - Seeking one additional engineer & one console analyst
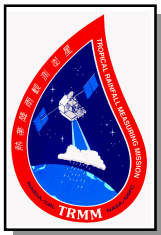
Training

- One Console Analyst has completed Spacecraft Analyst Certification

- Three Console Analysts nearing Certification completion

    – Requirements include S/C subsystems tests and training, completion of the required reading list and one supervised week as shift lead.

    – Completion is expected to occur shortly

- New engineer is studying TRMM spacecraft & operations
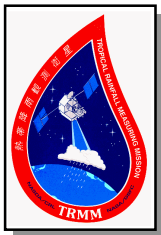
ACS Subsystem

- Sudden change in solar activity forced mid-afternoon burn, 00-094

- Daily EPV failed on 00-099 (ER #166) and 00-105

- Writing to EEPROM

  - Solar Array jitter patch (AR #74)

    » AETD accepted patch (email from Sam)

    » Plan to write to EEPROM next week

  - TDRS EPVs limits update (AR #60 - CCR #035)

    » Plan to complete this week

  - Correction for Magnetic Field Epoch (CCR #005)

- Possibility of pitching S/C to warm PR in Safehold or Sun Acq

- ACS Flight Software bug (CCR #053)

- FDF analyzing whether MOI needs to be updated (WR #007)
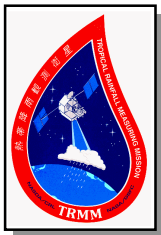
Deployables Subsystem

- -Y solar array drive temperature

  - Currently solar array drive continues to operate nominally

- Open Issues

  - AETD looking into the possibility of checking the glitch buffer by loading software stops that will enable the solar arrays to track past 90°

    » Risk analysis continues: Currently it appears that the chance of the array getting stuck past 90° outweighs the benefit of checking for slippage
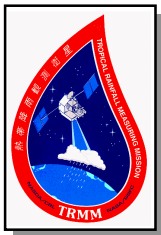
RCS Subsystem

- RCS performed nominally through 10 Delta-V maneuvers #177 - #189

- Fuel remaining is 586.910 kg (65.9% of total)

- Maneuver frequency average in April was every two days

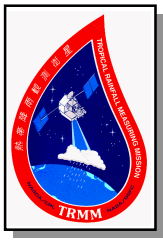 – Back up to every three days

C&DH Subsystem

- UTCF was adjusted on 00-097, 108, and 116

  - Current UTCF value is 31535996.844762 sec

- Open Issues

  - Writing from RAM to EEPROM (CCR #034)

    » New TSM table #21 and RTSs # 2, 3, 13, 14, and 15

    » Possible for this week

  - New DS filter table to record ACE data (CCR #048)

  - No-clock software patch developed (CCR #047)
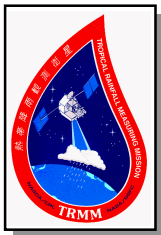
    » Possible FS-A failover option?

RF Subsystem

- 3 Generic Late Acqs (#53-55)

- Open Issues

  - Offsetting the transponder frequencies looking more probable based on trending
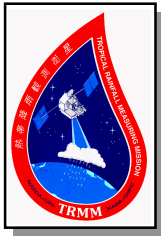
Power Subsystem

- PSIB auto-SPRU (no trickle charge) remains disabled

  – Monitor system with Code 563 close to Beta ±58°

  – May enable auto-SPRU if C/D running high

Electrical Subsystem
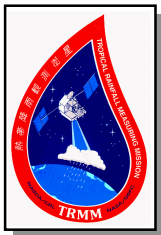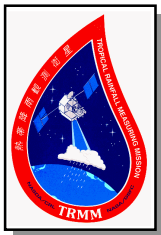
- Electrical subsystem is nominal

Thermal Subsystem

- Thermal subsystem is nominal
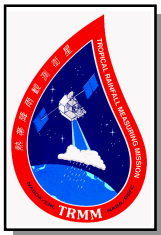
CERES Instrument

- Internal Calibrations on 00-103 and 00-117

- Azimuth testing completed

  - Operations with "sticky" spot fully characterized

- Noise/ Bias testing

  - Complete RAM memory dump performed

  - Several telemetry changes and dwelling during the month

  - Bridge balance resets reduced to nominal amount

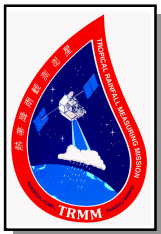 - Total, Shortwave, and Longwave temperature controllers powered off

CERES Instrument

- Open Issues

  – Bridge Balance Resets occurring more frequently (Anomaly #80)

  – Azimuth stall after Delta-V on 00-057 (Anomaly #79)

  – Continuous Biaxial operations planned

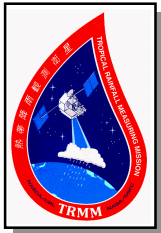 – DR on ground system to incorporate new CERES requirements

LIS Instrument

- Routine MSFC real-time command request performed on 00-110

PR Instrument
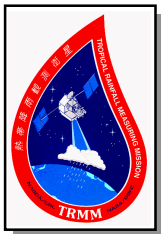
- Open Issues

    - Frequency agreement expiration

        » Meeting held on 00-117

        » Working with Joe Deskevich to resolve

    - Opening of PR survival heater relays and notification of pitch study

        » Initiated talks with NASDA via USA TIL

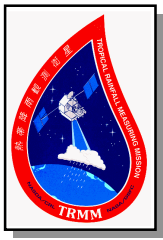   » NASDA provided thermal restrictions

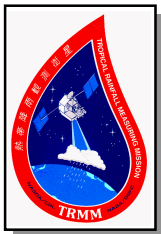# TMI Instrument

- No concerns or open issues

VIRS Instrument

- 2 Solar Calibrations were performed on 00-108

- Blackbody temperature still being maintained between 9 °C and 16 °C
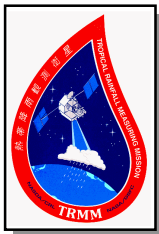
Ground System

- OS security patch installed on string 2 on 00-104, string 3 on   00-117, and string 1 on 00-118

- MOC power study underway

- Event Reports

  - #166: Daily EPV failed

  - #168 and 169: UPS-5 Failure

  - #170: No Acq

    » Possible ADPE failure

  - #171: Data not released during event (00-113)

    » Caused OVERFLOW of the science recorders (~26 min)

  - #172: TR1WS2 Power Supply failed

  - #173: Mission Planning software failed

    » De-installed security patch on string 3

Upcoming Activities

- 0-2 Months

    - Continue CERES operations

    - Regroup from an FOT perspective due to personnel losses

    - SA Jitter Patch to EEPROM

    - Dump ACS / SC EEPROM memory and update GRIs

    - Support UPS power reconfiguration in MOC

    - System Software Release 8.1 testing and implementation

    - 2nd draft of TRMM Continuous Risk Management Plan

    - Continue to close CCRs, MOCRs, ERs, ARs, and MSR Action Items

Upcoming Activities

- 2-3 Months

  – Emergency EPO Switch location transfers

  – First draft of TRMM End of Life and Controlled Re-entry Plan

  – Complete initial CRM Database population and commence monthly CRM meetings

- 3-12 Months

  – Test, validate, and eventually accept new PACOR-A system

  – Commence DSN/GN FOT training

  – Testing of new PTP hardware and software deliveries

  – System Software Release 8.2 Delivery

  – Transponder Offset Activities